

In the Claims:

Please amend claims as follows:

1. (Canceled).
2. (Currently Amended) The encoder of ~~claim 1~~claim 15, wherein the coder for encoding selectively chooses the at least one long term reference block when a connection used by the video encoder changes to a lower quality.
3. (Currently Amended) The encoder of ~~claim 1~~claim 15, wherein the coder for encoding selectively chooses the at least one long term reference block when a connection used by the video encoder is anticipated to be changing to a lower quality.
4. (Currently Amended) The encoder of ~~claim 1~~claim 15, wherein the coder for encoding selectively chooses the at least one long term reference block to encode background data and selectively chooses a more recent reference block to encode foreground data.
- 5-11. (Cancelled)
12. (Currently Amended) The encoder of ~~claim 11~~claim 15, wherein the coder conducts a fractional pixel accuracy encoding, by, determining, for the at least one long term reference block and on a fractional pixel grid,  
original pixel positions including pixels that coincide with an actual pixel position;  
horizontally or vertically interpolated pixel positions including pixels that lie between two original pixel positions; and  
diagonally interpolated pixel positions.

13. (Currently Amended) The encoder of ~~claim 12~~claim 15,  
wherein:

first moments of the horizontally or vertically interpolated pixel positions  
and the diagonally interpolated pixel positions are calculated directly; and

second moments of the horizontally or vertically interpolated pixel  
positions and the diagonally interpolated pixel positions are estimated.

14. (Cancelled).

15. (Currently Amended) ~~The encoder of claim 14~~A video encoder  
comprising:

a coder for encoding vectors to describe at least an image block with  
respect to at least a reference block;

a short term reference block buffer storing at least one short term reference  
block; and

at least one long term reference block buffer storing at least one long term  
reference block;

wherein the coder selectively chooses between encoding with respect to the  
at least one short term reference block in the short term reference block buffer and the at  
least one long term reference block in the long term reference buffer based upon one or  
more factors examined at the time of encoding to improve one of compression, video  
quality, and a metric balancing compression and video quality,

wherein the at least one long term reference block buffer comprise a  
multiple frame buffer, and the encoder selectively chooses between coding using  
the reference block (INTER coding) and using INTRA coding, and

wherein the coder chooses between two types of INTER coding and the  
INTRA coding, the two types of INTER coding comprising coding using the at least one  
short term long term reference block (ST) and the at least one long term long term

reference block (LT), and wherein;

the coder computes moments for the INTRA coding and the ST block using a recursive optimal per pixel estimate treating elements of a previous block as a random variable; and

the coder computes moments for the LT block using a recursive optimal per pixel estimate treating elements of a previous block as a random variable.

16-17. (Cancelled)

18. (Currently Amended) The encoder of ~~claim 14~~claim 15, wherein the at least one long term reference block comprises a block in a region of interest.

19. (Currently Amended) The encoder of ~~claim 14~~claim 15, wherein the at least one long term reference block comprises a composite frame predicted from both the short term frame memory and the long term frame memory.

20. (Currently Amended) The encoder of ~~claim 14~~claim 15, wherein the at least one long term reference block comprises a long term reference frame and the coder encodes a frame on a block by block basis.

21-31 (Canceled).